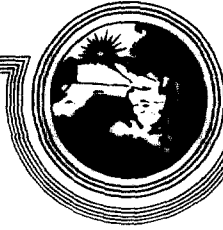


STATE • INDIANA

INDIANA UTILITY REGULATORY COMMISSION
302 W. WASHINGTON STREET, ROOM E306



INDIANAPOLIS 46204

September 26, 1995

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VIA FEDERAL EXPRESS

William F. Canton
Acting Secretary
Federal Communications Commission
Mail Stop 1170
1919 M Street, N.W., Room 222
Washington, D.C. 20554

Re: CC Docket No. 95-115, FCC No. 95-281 - Amendment of
the Commission's Rules and Policies to Increase
Subscribership and Usage of the Public Switched
Network

Dear Mr. Canton:

Enclosed please find an original and nine copies of the
comments of the Indiana Utility Regulatory Commission in the above
referenced proceeding. Copies of the comments have also been
furnished to Ernestine Creech and International Transcription
Service as requested in the Notice.

Please stamp and return the provided copy to confirm your
receipt. Please contact me should you have any questions
concerning this matter.

Sincerely,

A handwritten signature in cursive script, appearing to read "B. M. Pauley".

Robert M. Pauley
Chief Economist

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Enclosures

BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554

RECEIVED

SEP 27 1995

FCC MAIL ROOM

In the Matter of

Amendment of the Commission's)
Rules and Policies to Increase)
Subscribership and Usage of the)
Public Switched Network)

FCC No. 95-281

CC Docket No. 95-115

DOCKET FILE COPY ORIGINAL

COMMENTS OF THE
INDIANA UTILITY REGULATORY COMMISSION

I. INTRODUCTION

The Indiana Utility Regulatory Commission (IURC) hereby responds to the Federal Communications Commission's (FCC) Notice of Proposed Rulemaking (Notice) on Subscribership, In re Amendment of the Commission's Rules and Policies to Increase Subscribership and Usage of the Public Switched Network, released on July 20, 1995. In the Notice, the FCC requests comment on several proposals and tentative conclusions concerning certain local and toll service disconnection policies, subscriber penetration rates, and telephone assistance programs. Our comments will focus primarily on Section III, "Subscribership Barriers and Measurements;" however, we have included summary comments on several other selected portions of the Notice.

II. DISCUSSION

The following sections contain discussions of Indiana's current disconnection policy, multiple balance billing, alternative disconnection policies and the Lifeline Assistance Program.

DISCONNECTION POLICIES

The Indiana Utility Regulatory Commission agrees that customers' inability to pay long distance charges and the lack of control over long distance bills are two significant barriers to remaining on the public switched network. In Indiana, there is no specific statute or administrative rule that prohibits a local exchange company (LEC) from disconnecting customers from their local basic service due to outstanding long distance charges. However, other IURC administrative rules, which are designed to provide customers with appropriate notification about and alternatives to local service disconnection, have proven effective in handling these situations. When requested by the customer or the IURC Consumer Affairs Division, LECs in Indiana generally have been willing to review the customer's bill and the pending disconnection and, when appropriate, to implement toll blocking.

It should be noted during any discussion of blocking access to toll services while permitting retention of local exchange service, the IURC asserts that the provision of local exchange service is the fundamental function of telephone service. A customer's ability to call local emergency services, hospitals, schools, government support agencies, crisis prevention agencies, etc., far exceeds any perceived need to make long distance calls.¹ The IURC believes this position is consistent with the notion that local telephone service is an essential service.

¹ Because emergency/government services boundaries are not necessarily coterminous with exchange boundaries, it is possible that a customer would have to place a toll call to access certain agencies. Those toll calls should be permitted in addition to the retention of local service.

MULTIPLE BALANCE BILLING

It has been our experience that negotiating the continuation of local basic service when the customer has outstanding interLATA toll charges is fairly simple under the IURC's current rules and regulations. In these cases, the LEC is merely acting as a billing agent for the Inter-Exchange Carrier (IXC), Alternative Operator Service provider (AOS), or WATS reseller. Assuming the LEC switches involved have toll blocking capability, it is a simple task for LECs to continue basic local service, apply a toll block, and send the outstanding charges back to the company requesting payment.

We note that, for those states or LATAs where 1+/0+ equal dialing/dialing parity/presubscription has not been authorized, there may be incongruity between involuntary disconnection for non-payment for toll services provided by or through the LEC itself (intraLATA toll) and involuntary disconnection for non-payment for toll services provided by an IXC, reseller, AOS provider, etc. (interstate or interLATA toll). Without 1+/0+ dialing parity and depending upon the structure/provision of intraLATA toll by the LECs, non-payment of intraLATA toll charges results in a direct revenue loss to those LECs providing those intraLATA toll services; whereas, if a LEC's local customer is delinquent in paying some or all of any interLATA or interstate toll rates and charges (or any non-1+/0+ intraLATA traffic, such as 10XXX, 950, etc.), it is the IXC, reseller, or AOS provider that loses the toll (or operator services) revenue through billing & collection agreements that permit the toll charge to be sent back to the toll provider. However, unless the LEC has the software capability to render separate bill balances for all types of service: local service,

intraLATA toll calls and interLATA toll calls,² it will likely have to lump the bills for all types of services together. Because of its inability to allocate customer payments to just the outstanding local balance or just the outstanding toll balance(s), a LEC choosing to disconnect the delinquent customer may have only two choices: to involuntarily disconnect for non-payment of any toll charges or not to disconnect at all. We do not believe that toll blocking, *per se*, specifically *requires* the rendering of a bill with separate service balances. However, due to the problems outlined above, some form of multiple balance billing could allow those LECs involved in the provision of 1+/0+ intraLATA toll services to more easily implement toll blocking for non-payment of interLATA, interstate, or non-1+/0+ intraLATA services while still retaining those delinquent toll customers as local customers.

Although multiple balance billing may provide the LEC and its customer a means for determining the application of payments so that local exchange service is retained and toll service is blocked, the IURC is concerned about the cost of implementing such a billing system. Traditionally, LEC billing systems have been designed so that a total-balance bill (including all local service and toll elements) is sent to the customer. This traditional billing design has remained unchanged in Indiana, even with the addition of E911 and Telecommunications Relay Service (TRS) surcharges; although the E911 and TRS are identified on a customer's bill, the charges are included in the total-balance bill. The IURC believes that further discussion about multiple balance billing is warranted, but this discussion needs to include

² The rendering of a single bill (with separate totals) for local service, intraLATA toll calls and interLATA toll calls is commonly referred to as 'multiple balance billing.' The billing system for multiple balance billing would have to allow for payment of a separate balance for any one service, as well as the payment of the balance total for all the services.

hard numbers about the cost of implementing this billing system before any decisions should or can be reached.

ALTERNATIVE DISCONNECTION POLICIES

The IURC believes the marketing of local service features such as customer calling features to low income customers can also affect customers' connection to the network. When those low income customers do not pay - or are late in paying - for such vertical services, the effect is the same as occurs with delinquent toll customers - local service disconnection. If a LEC does market call-waiting, voice mail, linebacker, etc. to a customer who has trouble paying for basic local service, and this customer becomes delinquent, removing these features prior to complete disconnection would be an alternative measure that may encourage continued subscribership.

On March 22, 1995, the IURC approved a request by GTE North, Inc. to implement its Advanced Credit Management system. This procedure allows blocking of customer access to the toll network, in lieu of local service disconnection, once certain credit limits have been exceeded.³ Customers whose toll service is blocked under this procedure will still be able to place and receive local calls, and will be able to place calls to emergency agency numbers that are long distance. A charge for restoring service is not applicable when the customer's toll service is unblocked. GTE stated in the supporting material it submitted with this filing that this procedure will result in fewer deposits being required from new customers, cut the amount of uncollectibles due to excessive toll use, and reduce the number of complete disconnections of service. GTE also submitted cost support studies in which the Company projected a positive revenue impact, mainly due to a reduction in uncollectibles. At this point, the IURC has not attempted to collect any empirical data about the new credit

³ All types of toll services are blocked under this scenario.

plan; the procedure does, however, appear to offer some benefits for both customers (a possible increase in customer penetration rates) and the GTE North, Inc.

STATE DETERMINATION OF DISCONNECTION POLICIES

It is interesting, although somewhat disquieting, that the FCC has issued this Notice into certain aspects of disconnection policies for local exchange service that the IURC believes are basically local in nature. Certainly, when customers are faced with disconnection of their local service, for either intrastate and/or interstate long distance charges, they are most likely to contact their state's telecommunications regulatory agency, not the FCC. We do not believe there is any reason to expect this propensity to change, even in a competitive environment. As a result of their close contacts with customers, state regulatory agencies are uniquely situated to consider and understand local conditions and respond accordingly. The IURC supports the resolution that was passed by the National Association of Regulatory Utility Commissioners on July 27, 1995, which encourages a collaborative FCC and state commission effort in addressing these issues, and a copy is attached to these comments.

LIFELINE ASSISTANCE

The IURC has authorized the Link-Up Indiana program; we have not authorized either type of Lifeline program described in the Notice. The subscribership rate for Link-Up Indiana is smaller than similar programs in most of the nearby states, and the IURC has not been able to determine exactly why the penetration rate is lower. The IURC is currently investigating whether and how local competition should be implemented, and we are reluctant at this point to opine on the desirability of the IURC implementing - or the FCC modifying - the Lifeline program, prior to the conclusion of our investigation. As part of our local exchange competition

investigation, the IURC may make findings regarding universal service support which would affect - or be affected by - the possible implementation of a Lifeline program in Indiana. We are, however, not necessarily opposed to the FCC modifying the Link-Up program, but there should be further discussion and comment about any proposed changes to the program. It is requisite that any modifications be in the best interest of all telephone customers in the State of Indiana.

III. SUBSCRIBERSHIP BARRIERS AND MEASUREMENTS

Following is a summary of research which the Indiana Utility Regulatory Commission has conducted into telephone penetration levels, including a discussion of certain limitations of penetration data published by both the U.S. Bureau of the Census and the Federal Communications Commission.

GENERAL COMMENTS ON THE USE OF CENSUS DATA TO DETERMINE TELEPHONE PENETRATION LEVELS

Both the U.S. Bureau of the Census and the Federal Communications Commission measure the availability of telephone service according to so-called "telephone penetration" levels, which are given as percentages. The Census Bureau collects data on telephone penetration levels through two different surveys: 1) the Decennial Census, which is taken once every ten years, and 2) the Current Population Survey (CPS), which is a monthly survey. Penetration questions, however, are asked only three times a year during the CPS survey (March, July, and November). Both surveys ask respondents if there is a telephone in the housing unit. On the CPS, the Census Bureau asks those individuals in its sample without a telephone in their respective housing units whether they can receive a telephone call at another location - e.g., at a neighbor's house or apartment, at a nearby store or restaurant, etc.

Because Decennial Census data for individual states is comparable, derived statistics such as penetration rates can be compared with each other, as well as to income levels, poverty status, public assistance income, etc. CPS data for different states are less easily compared. Because of the small sample size for the CPS, the Census Bureau will only "vouch" for the penetration data collected in March, July and November, for the eleven states with the largest populations, which does not include Indiana. The annual averages, which are, themselves, an average of these three averages, are considered somewhat more reliable.⁴

Thus, anyone wishing to use the Census Bureau's telephone penetration data for smaller states like Indiana must choose between using data which is presumed to be valid and reliable but which is now at least six years out of date (the 1990 Decennial Census data) and data which is fairly current, the validity and reliability of which are seriously hampered by the small sample size.

Furthermore, Indiana is aware of certain discussions within the Bureau of the Census to determine whether (1) to continue collecting telephone penetration data at all for future decennial censuses, beginning with the 2000 Census and (2) whether to

⁴ "Unfortunately, the results of the CPS data cannot be directly compared with the penetration figures contained in the 1980 and 1990 decennial censuses. This is because differences in the sampling and survey methodologies exist and because of differences in the context in which the questions were asked. The 1990 decennial census reported 94.8% of all households in the United States ha[d] telephones, whereas the CPS data show a penetration rate of 93.3% for 1990. This difference is statistically significant [at the national level] and appears to indicate that the CPS value may be on the low side and the decennial census value may be on the high side, with the truth lying somewhere in between." 1995 FCC Monitoring Report, at 12. Similarly, the 1990 Decennial Census reported a 94.11% penetration level for Indiana, while the Current Population Survey reported an annual average of 92.8%. The true figure for Indiana is also likely somewhere in between.

supplement the Decennial Census with some form of "continuous measurement." The Census Bureau might choose to collect telephone penetration data only on the Decennial Census form, only on the "continuous measurement" form(s), or both.⁵

INAPPROPRIATENESS AND IMPRACTICALITY OF REACHING 100% PENETRATION RATE

Indiana agrees that it unrealistic to expect the telephone penetration level to reach 100 percent. There seem to be at least two sets of factors which may affect telephone penetration and universal service: 1) those factors which the telephone companies can control, e.g., rates, and 2) those factors which they cannot control, e.g., factors which may cause a customer to decline phone service such as personal preferences, household income, poverty status, etc.⁶ This division corresponds roughly to those factors over which State Public Service Commissions (PSCs) or Public Utility Commissions (PUCs) may have some jurisdiction (rates), depending upon the statutory, regulatory, and judicial frameworks operating in a particular state, and those factors over which the state commissions do not have jurisdiction (income, poverty, etc.).

Even if all of the factors limiting telephone subscribership were eliminated, there would be a certain number of households that did not want telephone service and would not subscribe. Many of

⁵ Presentation by various personnel from the U.S. Bureau of the Census (Washington, DC (Headquarters) and Chicago (Regional Office)), Indianapolis, Indiana, March 2, 1995; and informal telephone conversations with Census personnel.

⁶ This list of factors should not be considered exhaustive; there may be other possible relevant factors, such as employment status. Nevertheless, each of these factors listed may explain some of the differences in penetration levels between counties within an individual state; between particular counties and a statewide penetration rate; between two or more states; and between one or more states and the national average.

the Old Order Amish in Indiana, for example, do not want telephone service in their homes. At the other end of the spectrum, there may be certain households which are not technology-averse at all but which have chosen to spend that portion of their disposable income that might otherwise have gone toward telephone service on cable television and/or other entertainment services.

Given this impossibility of achieving a penetration level of 100%, there are certain implications for regulators. First, any explicit penetration requirements and/or goals should be set at realistic levels. Second, penalizing telephone companies for failing to serve 100% of their potential customers would be unreasonable. Third, offering financial inducements to individuals or groups that do not want telephones would be ineffective and inappropriate. Fourth, providing financial incentives to telephone companies to serve those individuals or groups that do not want telephones in their homes would also be inappropriate.

1. Telephone Penetration Levels - Analysis of Data

a. Comparisons with Other States

The 1995 FCC Monitoring Report contains two maps showing national penetration information: "1994 Telephone Penetration" and "Penetration Changes 1984 - 1994". The Monitoring Report also contains a line graph showing the changes in national penetration levels from November, 1983, to November, 1994, for both the "Unit" and the "Avail" categories. By definition, these maps and the line graph are based upon CPS data, rather than upon data from the Decennial Census; the usefulness of the CPS data to small states has already been discussed. For both consecutive and nonconsecutive years, the FCC does include critical values and various correction factors in the Report (e.g., page 15 and Table 1.7 (page 46)) for use in comparing both the "Unit" and the "Avail" annual averages. These make the CPS data somewhat more reliable;

however, the Indiana Staff has been informally advised by both FCC and Census Bureau personnel that even the corrected annual average penetration levels based upon CPS data may not be totally reliable for small states such as Indiana.

b. Telephone Penetration Levels and Geographic Areas Smaller than the State

By definition, some counties within a given state - and some municipalities within those counties - have penetration levels above the state or national average, while others have penetration levels below one or both these averages. Several possible reasons for this variability are discussed in the next section.

2. Factors Which May Affect Universal Service; Variability In Telephone Penetration Levels⁷

The 1990 Census data reveal a range of penetration levels, from 76% for Lagrange County to 98% for Hamilton, Hendricks, and Porter Counties. The telephone penetration levels for a particular county can be compared with other demographic indicators, such as median household income, degree of urbanization, number of households receiving public assistance income, etc. subject to the various caveats mentioned in this Report. For example, in 1989,⁸

⁷ Note: while it is possible to compare two or more geographic areas on the basis of both their respective telephone penetration levels and various demographic factors - e.g., income - "causation" is not implied. Statistically, it is very difficult, if not impossible, to prove actual causation. Nor is the Indiana Commission prepared to posit a statistically significant "correlation" between telephone penetration levels and any of the individual demographic factors reviewed. Establishing statistically significant correlation between telephone penetration and income or any other factors would require significantly more research than we have been able to do up to this point.

⁸ While most of the 1990 Decennial Census data does, in fact, reflect conditions in the year 1990, the relevant income and poverty data actually reflect 1989 conditions. In other words,

Hamilton County had the highest median household income in Indiana, \$45,748, as well as the highest telephone penetration rate, 97.63%. Crawford County had the lowest household median income, \$20,367, and a penetration rate of 82.92%. LaGrange County had a noticeably lower penetration level, 75.98%; however, the median household income (\$27,296) was much higher than for Crawford County. While income levels may be important in explaining penetration levels, they are not the only explanatory factor.

a. *Telephone Penetration Levels and Income*

Some caution must be used in comparing income and poverty data with either telephone penetration data or other demographic data. For the 1990 Decennial Census, the Census Bureau relied upon 1989 income and poverty data;⁹ however, the majority of the Census Bureau's other (non-income) data reflects conditions in the first few months of 1990 (the April 1, 1990, Decennial Census, or the monthly CPS). Even so, the Census Bureau's 1990 data on telephone penetration in Indiana relative to income, poverty status, etc., can be compared to similar data for other states, or to national or regional averages. Data for two or more separate Indiana counties, cities, townships, etc., may also be compared.

Tables and appendices have been developed to assess the relationship between telephone penetration and three specific income variables for 1989: 1) median household income, 2) household poverty status, and 3) receipt of public assistance income. The

various Census Bureau reports and tables compare household telephone penetration levels in 1990 with the number of 1990 households below the 1989 poverty level or median household income, etc.

⁹ U.S. Dept. of Health and Human Services (HHS), "Annual Update of the Poverty Income Guidelines," 54 Fed. Reg. 7097 (1989). See, Community Services Block Grant Act, Title VI, Subtitle B, § 673(2), 95 Stat. 511, 512 (1981) (current version at 42 U.S.C. § 9902(2)).

relationship between poverty status and public assistance income is also explored.

Median Household Income.¹⁰

The following table shows the twenty counties with the highest 1989 median household incomes, as well as their 1990 telephone penetration levels, plus numerical rankings for both variables.

1990 TELEPHONE PENETRATION LEVELS, WITH 1989 INCOME DATA								
(COUNTIES ARE SORTED BY MEDIAN HOUSEHOLD INCOME, FROM HIGHEST TO LOWEST)								
COUNTY	TOTAL HOUSEHOLDS					PENETRATION RANK	MEDIAN HSHLD INCOME	
	# HSHLDS	# W/ PHONE	% W/ PHONE	# W/O PHONE	% W/O PHONE		(\$) RANK	RANK
Hamilton	38,834	37,915	97.63%	919	2.37%	2	\$45,748	1
Hendricks	26,109	25,485	97.61%	624	2.39%	3	\$39,892	2
Hancock	15,959	15,439	96.74%	520	3.26%	6	\$37,333	3
Porter	45,159	44,125	97.71%	1,034	2.29%	1	\$37,142	4
Johnson	31,354	30,185	96.27%	1,169	3.73%	11	\$35,035	5
Boone	13,922	13,425	96.43%	497	3.57%	9	\$34,652	6
Warrick	15,817	15,061	95.22%	756	4.78%	17	\$34,069	7
Morgan	19,600	18,652	95.16%	948	4.84%	19	\$32,762	8
Allen	113,333	106,976	94.39%	6,357	5.61%	34	\$31,835	9
Kosciusko	23,449	21,556	91.93%	1,893	8.07%	71	\$31,666	10
Posey	9,508	9,142	96.15%	366	3.85%	13	\$31,530	11
Howard	31,523	29,803	94.54%	1,720	5.46%	28	\$31,511	12
Dearborn	13,642	12,939	94.85%	703	5.15%	23	\$31,398	13
Wells	9,438	8,976	95.10%	462	4.90%	20	\$31,261	14
Dubois	13,023	12,608	96.81%	415	3.19%	5	\$31,227	15
Tipton	6,026	5,873	97.46%	153	2.54%	4	\$31,198	16
Whitley	10,010	9,649	96.39%	361	3.61%	10	\$31,128	17
Elkhart	56,713	51,895	91.50%	4,818	8.50%	72	\$30,973	18
Bartholomew	24,192	22,890	94.62%	1,302	5.38%	26	\$30,971	19
DeKalb	12,725	11,904	93.55%	821	6.45%	43	\$30,970	20
INDIANA	2,085,365	1,943,803	94.11%	121,782	5.89%		\$28,797	

Sources: U.S. Bureau of the Census, 1990 Summary Tape File STF 3A; "Income and Poverty Status in 1989: 1990" (1990 CPH-L-81, Table 3) [paper]. See, also EDIN (Economic Development Indiana Network), Indiana Univ. Business Research Ctr. - misc. databases.

¹⁰ U.S. Bureau of the Census, Summary Tape File STF3; data compiled at 1990 Census of Population and Housing (CPH-L-81) (Indiana) (paper copy), Table 3, "Income and Poverty Status in 1989: 1990."

A comparison of the respective rankings for the 20 counties in Indiana with the highest median household incomes listed suggests that this factor does not explain all of the variation in penetration levels between counties. For example, Kosciusko and Posey Counties had the 10th and 11th highest median household incomes in 1989 (\$31,666 and \$31,530, respectively - a difference of \$136.00); however, they ranked 71st and 13th, when comparing their 1990 penetration levels (91.93% and 96.15%, respectively - a difference of 4.22%). Similarly, Whitley and DeKalb Counties had the 17th and 20th highest median household incomes in 1989 (\$31,128 and \$30,970 - a difference of \$158.00); however, they had the 10th and 43rd highest penetration levels (96.39% and 93.55%, respectively - a difference of 2.84%). Finally, Hamilton County had the highest median household income in 1989, \$45,748. The next closest county was Hendricks County, with a median household income of \$39,892, a difference of \$5,856. Porter County had the highest 1990 penetration level (97.71%) but only the fourth highest 1989 median household income (\$37,142). The difference in penetration levels between Hamilton and Porter Counties is only 0.08%. This difference is so small, it could easily have been due to sampling error or chance variations. What is somewhat surprising - at least if one assumes that income is a good predictor of penetration rates - is precisely this lack of any appreciable difference in penetration levels, despite the \$8,606 difference in the respective 1989 median household incomes for the two counties.

More research and analysis are needed to determine what relationship - if any - exists between income and telephone penetration levels in geographic areas below the county level (e.g., townships or census tracts).

Poverty¹¹, Public Assistance Income¹², and Telephone Penetration.¹³

A comparison of all 92 Indiana counties based on the number of occupied households above and below the 1989 poverty level and the number of occupied households with and without a telephone in 1990 suggests that there may be some correlation between high poverty rates and low telephone penetration levels. Further analysis is needed to determine the strength of the correlation.

Based upon the twenty Indiana counties with the highest percentages of persons receiving some form of public assistance income, it appears that there may be some relationship between the percentage of households receiving some form of public assistance income and the percentage of households without a telephone.

It must be stressed, however, that living below the poverty line is not the same as receiving public assistance income. In 1989, households both above and below the poverty line received some public assistance income.

¹¹ U.S. Bureau of the Census, Summary Tape File STF4B, Table HB24, "Tenure by Poverty Status in 1989 by Telephone in Housing Unit."

¹² U.S. Bureau of the Census, Summary Tape File STF3; data compiled at 1990 Census of Population and Housing (CPH-L-81) (paper copy), Table 3, "Income and Poverty Status in 1989: 1990."

¹³ See U.S. Bureau of the Census, 1990 Decennial Census, Summary Tape File STF4B (Indiana), Table 26.

b. Telephone Penetration and Degree of Urbanization¹⁴

Some have argued that the below-average penetration rates occur only in rural communities, and not in urban ones. Nevertheless, it is possible to compare penetration levels in both urban and rural areas of the state. While the telephone penetration levels in most of the "urban" counties in Indiana are at or near the state average, there are many areas within those "urban" counties that are below the state average, perhaps significantly.

Caution is in order when using "degree of urbanization" (or the converse, degree of ruralization) as a predictor of telephone penetration levels. The following table, "Urbanization, Median Household Income, and Telephone Penetration," displays the top 20 Indiana counties, based on the percentage of occupied households classified as "urban" in the Census Bureau's 1990 Decennial Census, plus 1990 penetration and 1989 income rankings for each of the 20 selected counties.

¹⁴ See 1990 Census of Housing: Detailed Housing Characteristics (1990 CH-2-16; paper copy); Table 96, "Occupancy and Social Characteristics of Rural Housing Units: 1990," at 263-272 (U.S. Dept. of Commerce, Economics and Statistics Administration, Bureau of the Census).

Total "Occupied Housing Units" appears at numerous tables in the Census Bureau's Summary Tape files STF3 and STF 4; see, e.g., STF4B, Table HB24.

Urban "Occupied Housing Units" data are calculated by subtracting Rural from Total data.

URBANIZATION, MEDIAN HOUSEHOLD INCOME, AND TELEPHONE PENETRATION

(COUNTIES ARRANGED BY % OF URBAN HOUSEHOLDS; WITH PENETRATION AND INCOME RANKINGS)

COUNTY	HOUSEHOLDS				# TOTAL	% W/ PHONE	PENETRATION		MEDIAN HSHLD INCOME	
	# URBAN	% URBAN	# RURAL	% RURAL			RANK		(\$)	RANK
Marion	318,471	100.00%	-	0.00%	318,471	94.57%	27		\$29,152	27
Lake	163,598	95.81%	7,150	4.18%	170,748	94.94%	22		\$30,439	21
St. Joseph	80,581	87.24%	11,784	12.76%	92,365	96.48%	8		\$28,235	36
Vanderburg	58,255	87.23%	8,525	12.77%	66,780	94.37%	35		\$25,798	56
Allen	95,911	84.63%	17,422	15.37%	113,333	94.38%	34		\$31,835	9
Tippecanoe	34,897	76.50%	10,721	23.50%	45,618	95.51%	15		\$27,830	41
Johnson	23,912	76.26%	7,442	23.74%	31,354	98.27%	11		\$35,035	5
Clark	25,284	75.95%	8,008	24.05%	33,292	94.18%	37		\$27,386	43
Delaware	34,174	75.64%	11,003	24.36%	45,177	94.48%	31		\$24,438	74
Vigo	29,226	73.42%	10,578	26.58%	39,804	92.13%	65		\$23,505	77
Howard	23,006	72.98%	8,517	27.02%	31,523	94.54%	28		\$31,511	12
Elkhart	40,205	70.88%	16,508	29.11%	56,713	91.50%	73		\$30,973	18
Madison	35,050	70.38%	14,754	29.62%	49,804	93.34%	49		\$27,435	42
Hamilton	27,295	70.29%	11,539	29.71%	38,834	97.63%	2		\$45,748	1
Monroe	26,777	68.05%	12,574	31.95%	39,351	98.51%	7		\$24,781	66
Porter	30,678	67.93%	14,481	32.07%	45,159	97.71%	1		\$37,142	4
Floyd	16,217	67.33%	7,868	32.67%	24,085	94.43%	32		\$28,480	34
Fayette	6,270	63.05%	3,675	36.95%	9,945	90.12%	82		\$25,565	61
Grant	17,012	61.41%	10,689	38.59%	27,701	93.70%	40		\$26,248	50
Knox	8,915	58.86%	6,230	41.14%	15,145	90.89%	77		\$21,550	90
INDIANA	1,300,756	95.85%	604,500	33.10%	2,905,256	94.11%			\$28,797	

There is no obvious relationship between urbanization and telephone penetration. For example, Marion County, the largest urban county in the state and the only one classified as 100% "urban," ranked 27th for both telephone penetration level and median household income. Lake County, the next most urban county, ranked slightly higher for both median household income (21st) and telephone penetration level (22nd). Allen County ranked higher for median household income (9th) than Marion County but lower for

telephone penetration (34th). Similarly, the telephone penetration level varies substantially in the 20 "most rural" counties in Indiana, 12 of which are 100% rural. A brief discussion follows.

In 13 of the 20 Indiana counties with the highest penetration rankings for 1990 (calculated irrespective of degree of "urbanization" or "ruralization"), 50% or more of the households were classified as "rural"; in only seven of the 20 counties did "urban" households outnumber the "rural" ones. Indeed, none of the state's three largest urban counties (Marion, Lake, and Allen) were ranked in the top 20 for penetration levels in 1990. Furthermore, three counties that were classified as 100% "rural" were in the top 20 for penetration rankings: Brown (12th), Ohio (14th), and Benton (16th).

Finally, it is interesting that, while each county in the nine-county Indianapolis metropolitan area had a fairly high penetration rate in 1990, many of those nine metropolitan counties were, in fact, quite rural. This apparently did not hinder telephone subscribership.

In summary, it is clear from the 1990 Census data that low penetration levels are not confined to rural areas: both rural and urban counties may contain areas (cities, towns, townships, etc.) with low telephone penetration or subscribership levels. It is also clear that, while urbanization may contribute to high telephone penetration levels in some instances, the magnitude of this contribution is hard to predict.

c. Telephone Penetration and Age

According to the Census Bureau,

The elderly, due to their greater risk of having a medical emergency, were probably the age group most in need of telephones. It was found the older the householder, the smaller their chances were of lacking a

phone. The proportion who were phoneless fell steadily from 15 percent of those under age 25 to 2 percent of those aged 75 or older. As a result, nearly half of all householders without a telephone were under age 35.

Nonetheless, there were still half a million elderly householders (aged 65 or older) who lacked a phone.

"Statistical Brief" SB/94-16, U.S. Department of Commerce, Economics and Statistics Administration, U.S. Bureau of the Census (July 1994).

d. *Telephone Penetration and the Amish*

There are Old Order Amish congregations in several Indiana counties¹⁵, several of which have relatively low telephone penetration levels. The Amish presence in 14 counties makes the penetration levels lower than they would otherwise be. For example, Lagrange County had a penetration level for occupied housing units of only 76% in 1990; at least some of the deviation between that figure and the 1990 statewide penetration level (94.11%) can be explained by the large numbers of Old Order Amish in the county.

The presence of a measurable number of Amish in a particular county can also obscure or counteract the influence of other factors on telephone penetration levels. If a county had a relatively high median household income, one might expect that county to also have a fairly high penetration level. For example, Kosciusko County ranked 10th for 1989 median household income (\$31,666) and 71st for 1990 telephone penetration (91.93%). Similarly, Elkhart County ranked 18th for median household income in 1989 (\$30,973) and 72nd for telephone penetration (91.50%). Both counties have a sufficiently large number of Amish that the

¹⁵ Several other states, such as Pennsylvania and Ohio, also have a large Amish presence. These comments regarding telephone penetration levels among the Amish may be applicable to them, as well.

penetration rankings may be skewed downward. In 1989, Old Order Amish made up almost one percent of the population (0.92%, or 600 persons) of Kosciusko County and approximately one-and-three-quarters percent of the population (1.73%, or 2,700 persons) of Elkhart County. As the 1994 IURC Report to the Regulatory Flexibility Committee of the Indiana General Assembly explained, it is not known precisely what effect this Amish presence may have on telephone penetration levels, due to the difficulty of both converting Amish "persons" into Amish "households" and estimating the average size of those households.¹⁶ However, one can safely say that the penetration rankings in both Kosciusko and Elkhart Counties are lower than they would be without the presence of the Amish. This, in turn, makes the apparent relationship between the median household income rankings and the penetration rankings weaker than it may actually be.

More research and analysis is required to better understand Amish attitudes toward telephone usage. Until the effects of Amish attitudes on telephone service are better understood, the inclusion of the Amish in data used to calculate penetration levels may lead to incorrect conclusions regarding universal service. At a minimum, attempts by regulators, legislators, or telephone companies to "help" the Amish, or any other group not wishing to receive telephone service, may be misdirected if they are undertaken prior to conducting this additional research.

e. *Miscellaneous Factors*

In addition to religious or cultural beliefs which may preclude a particular household from having a telephone, there are a number of other factors affecting telephone penetration levels which can be grouped together in the broad category of "personal

¹⁶ 1994 Report to the Regulatory Flexibility Committee, IURC, July 1994, at pages 54-55.

preferences": (1) spending patterns regarding discretionary or disposable income, (2) home ownership, (3) the presence or absence of large numbers of college students in a community, and (4) mobility and migration patterns.

Indiana agrees that personal preferences play a role in determining the penetration level in a given geographic area. For example, there may be some households without a telephone that do have a television set. Some households in this group may also own a VCR or subscribe to one or more cable TV services, Direct Broadcast Satellite (DBS) services, etc. There may also be some households without a telephone that do own computers, video game players, stereo or CD equipment, etc. More research and analysis is needed to determine the ways in which attitudes toward various communications, electronic, and entertainment products and services affect telephone penetration levels (including, but not limited to, the ways in which people spend their disposable or discretionary income).

The Census Bureau Statistical Brief cited earlier noted that most of the phoneless in 1990 were renters: "Nearly 3 in 4 phoneless households lived in rental units. All in all, 11 percent of renter households lacked a phone." The Census Bureau concluded that men living alone were likeliest to have no phone. "Twelve percent of men living alone were phoneless; meanwhile, women living alone and married-couple families were much less likely to be without a phone (3 percent each). . . A mere 3 percent of householders in single-family houses had no phone; the rate rose to 8 percent for householders in buildings with two or more apartments. In other types of units (mostly mobile homes), the phonelessness rate reached 13 percent."

The presence of large numbers of college students in a city or county may also distort both the penetration rates and the underlying demographic variables, e.g. age, income, etc. As a

generalization, 1990 penetration levels for those Indiana counties with large numbers of **full-time** college or university students appear to be skewed upward, while the median household incomes for those counties appear to be skewed somewhat downward. Full-time college and university students are likely to work at relatively low-paying jobs, often for only a few hours a week. However, they are also likely to receive financial support either from parents or other relatives, or from student loans or other "financial aid" programs; thus, their disposable or discretionary income (and, hence, their ability to afford telephone service) forms a large proportion of their total income. Many college students have relatively few expenses, especially if they do not own a house or a car. Many students are also away from home for the first time on an extended basis and, thus, make a significant number of long-distance calls.

In order to determine the telephone penetration level existing in a particular state, county, or other geographic region, it is also necessary to consider the large numbers of people who move each year in the United States. A significant amount of migration following the collection of telephone penetration data (e.g., by the Bureau of the Census) may cause the results of any such data collection efforts (e.g., the Decennial Census) or any published telephone penetration data based upon those data to become obsolete (out of date) sooner than they otherwise would. Because of this premature obsolescence, a significant amount of migration out of, or into, a given state, county, or other geographic region over a given period of time may make it difficult to accurately determine any trends in penetration levels involving that region. Similarly, comparisons between multiple geographic regions experiencing large fluctuations in population during the time period in question would make it difficult to detect and analyze any trends in penetration levels.

Nationwide, according to CPS data¹⁷, 17.3% of the population living in the U.S. (age one year and over) in March, 1992, had moved since March, 1991.¹⁸ Specifically, 6.0% of the population (one year old and over) moved from a different county. To determine whether the telephone penetration levels of the affected counties increased, decreased, or stayed the same, it is necessary to consider whether the *households* represented by the people moving had a telephone or not. One must analyze both the household in which the person lived before he or she moved and the household to which he or she moved. A comparison of penetration levels between different counties in two or more states would require knowledge of at least four factors: (1) the county and state where the person lived before he or she moved, (2) the county and state to which the person moved, (3) whether the affected *household* had a telephone before the person moved, and (4) whether the affected *household* had a telephone after the person moved.

Any analysis of penetration levels for geographic areas smaller than the county level would also require a consideration of the 10.7% of persons which the CPS data suggest moved within the same county. At a minimum, this analysis should include the same process as outlined above.

Finally, it may be useful to consider the 0.5% of the population which the CPS data suggest moved to the U.S. "from

¹⁷ U.S. Bureau of the Census, Current Population Survey, data compiled at 1992 Current Population Reports: "Population Characteristics" (P20-473) (paper copy), Table B, "Geographic Mobility: March 1991 to March 1992."

¹⁸ The many problems associated with the small sample size used in the Current Population Survey for small states such as Indiana - and discussed elsewhere in the Indiana comments - are relevant to the discussion of mobility and telephone penetration, as well.

abroad" (defined as Puerto Rico, a "U.S. outlying area," or a foreign country).¹⁹

The 1990 Decennial Census²⁰ asked a slightly different question (for all persons age 5 years and older in 1990, how many had lived in the same house in 1985 and how many had lived in a different house), but the results appear generally consistent with those of the CPS: 46.7% had lived in a different house in 1985. This figure breaks down as follows: 25.46% had moved within the same county; 9.67% had moved from a different county within the same state, 9.37% had moved from a different county in a different state, and 2.22% had moved "from abroad." Any analysis of the various migration patterns suggested by the 1990 Decennial Census and the relevant penetration levels would likely include the same process outlined above.

For low-income households that move frequently, the connection or installation fees and any customer deposits may exacerbate any inability to afford basic telephone service. This phenomenon is not unique to frequent movers, of course, but it should be considered when analyzing the relationship between mobility or migration patterns and telephone subscribership levels.

AREAS REQUIRING FURTHER RESEARCH AND ANALYSIS

While we are not taking a formal position on the following issues in this document, we believe that all of them warrant

¹⁹ By definition, all those persons moving to the U.S. "from abroad" moved to a different house, a different county, and a different state.

²⁰ U.S. Bureau of the Census, Summary Tape File STF3C; data compiled at 1990 Census of Population: Social and Economic Characteristics [United States] (CP-2-1) (paper copy), Table 32, "Geographic Mobility, Commuting, and Veteran Status."